

What is claimed is:

1. An implant comprising a biocompatible polymer matrix sized and configured to be implanted in animal tissue and magnetic particles bound with the biocompatible polymer matrix and being magnetized to possess a desired polarity.

2. An implant according to claim 1, wherein the magnetic particles comprise isotropic or anisotropic materials.

3. An implant according to claim 1, wherein the magnetic particles comprise a material selected from the group of NdFeB, SmCo, ferrite, and alnico.

4. An implant according to claim 1, wherein the biocompatible polymer matrix includes a material selected from the group of polycarbonate, silicone rubber, polyurethane, silicon elastomer, flexible plastic, and semi-flexible plastic.

5. An implant according to claim 1, wherein the biocompatible polymer matrix includes a flexible material.

6. An implant according to claim 1, wherein the biocompatible polymer matrix includes a tissue in-growth region.

7. An implant according to claim 1, wherein the magnetic particles form regions of different particle densities within the biocompatible polymer matrix.

8. An implant according to claim 1, wherein the magnetic particles comprise an essentially uniform particle density within the biocompatible polymer matrix.

9. An implant according to claim 1, further including at least one discrete permanent magnet encapsulated within the biocompatible polymer matrix with the magnetic particles.

10. An implant according to claim 9, wherein the permanent magnet and the magnetic particles are

magnetized to have a common polarity.

11. An implant according to claim 1, further including at least one polymer-bonded magnet encapsulated within the biocompatible polymer matrix with the magnetic
5 particles.

12. An implant according to claim 11, wherein the polymer-bonded magnet and the magnetic particles are magnetized to have a common polarity.

13. An implant according to claim 1, further
10 including a flux shield comprising a soft ferromagnetic material coupled to the biocompatible polymer matrix.

14. An implant according to claim 1, wherein the desired polarity establishes a desired magnetic pole, and further including at least one stabilization magnet
15 coupled to the biocompatible polymer matrix, the stabilization magnet including a magnetic pole that is the same as the desired magnetic pole and that is oriented normal or at an acute angle to the desired magnetic pole.

20 15. An implant comprising a structure sized and configured to be implanted in animal tissue, the structure including at least one magnet made from a hard ferromagnetic material and a flux shield comprising a soft ferromagnetic material overlaying at least a portion
25 of the magnet.

16. An implant according to claim 15, wherein the magnet comprises a rare earth permanent magnet or a polymer-bonded magnet.

17. An implant according to claim 15, wherein the
30 structure includes a flexible carrier for the magnet and flux shield.

18. An implant according to claim 15, wherein the structure includes a tissue in-growth region.

19. An implant according to claim 15 wherein the
35 magnet includes a desired magnetic pole, the structure

further including at least one stabilization magnet having a magnetic pole that is the same as the desired magnetic pole and that is oriented normal or at an acute angle to the desired magnetic pole.

5 20. An implant comprising a structure sized and configured to be implanted in animal tissue, the structure including at least one magnet made from a hard ferromagnetic material having a desired magnetic pole, and at least one stabilization magnet having a magnetic
10 pole that is the same as the desired magnetic pole and that is oriented normal or at an acute angle to the desired magnetic pole.

 21. An implant according to claim 20, wherein the magnet comprises a rare earth permanent magnet or a
15 polymer-bonded magnet.

 22. An implant according to claim 20, wherein the structure includes a flexible carrier for the magnet and the stabilization magnet.

 23. An implant according to claim 20, wherein the
20 biocompatible polymer matrix includes a tissue in-growth region.

 24. A magnetic force system comprising an implant as defined in claim 1 or 15 or 20 implanted in animal tissue, and a source of magnetic force sized and
25 configured for placement to interact with the implant when implanted in tissue.

 25. A method for treating sleep disordered breathing comprising (i) placing at least one implant as defined in claim 1 or 15 or 20 in a targeted tissue
30 region comprising at least one pharyngeal structure or at least one anatomic component within a pharyngeal conduit, and (ii) orienting a source of magnetic force to interact with the implant to resist collapse of the tissue region.

 26. A method according to claim 25, wherein step
35 (i) includes placing the implant into a surgical pocket.

27. A method according to claim 25, wherein step (i) includes placing a receptacle into a surgical pocket and placing the implant into the receptacle.

28. A method according to claim 25, wherein step
5 (i) includes placing the implant in an implantation site through a surgical tissue flap.

29. A method according to claim 25, wherein step (i) includes placing the implant in an implantation site through a percutaneous access path.

10 30. A method according to claim 25, wherein step (i) includes stabilizing the implant within a mucosa, or a submucosa, or against a fascia, or against or within a muscle.

15 31. A method according to claim 25, wherein step (i) includes stabilizing the implant against a submucosa, a fascia, or against or within a muscle, without stabilizing through a mucosa.

32. A method according to claim 25, wherein step (i) includes encouraging tissue in-growth on the implant.

20 33. An implant system comprising an implant sized and configured to be implanted in a targeted tissue region comprising at least one pharyngeal structure or at least one anatomic component within a pharyngeal conduit, and means for forming a percutaneous access path for
25 placing the implant in the tissue region.

34. An implant system comprising an implant sized and configured to be implanted in a targeted tissue region comprising at least one pharyngeal structure or at least one anatomic component within a pharyngeal conduit,
30 and means for forming a surgical flap for placing the implant in the tissue region.

35. An implant system comprising an implant sized and configured to be implanted in a targeted tissue region comprising at least one pharyngeal structure or at
35 least one anatomic component within a pharyngeal conduit,

and means for forming a surgical pocket for placing the implant in the tissue region.

36. An implant system according to claim 33 or 34 or 35, further including means for stabilizing the
5 implant within a mucosa, or a submucosa, or against a fascia, or against or within a muscle.

37. An implant system according to claim 33 or 34 or 35, further including means for stabilizing the
10 implant against a submucosa, or a fascia, or against or within a muscle, without stabilizing through a mucosa.

38. A method for providing treatment for a physiologic condition comprising (i) providing an implant sized and configured to be implanted in a targeted tissue region comprising at least one pharyngeal structure or at
15 least one anatomic component within a pharyngeal conduit, and (ii) providing at least one tool and/or instructions for placing the implant in the tissue region through a percutaneous access path.

39. A method for providing treatment for a
20 physiologic condition comprising (i) providing an implant sized and configured to be implanted in a targeted tissue region comprising at least one pharyngeal structure or at least one anatomic component within a pharyngeal conduit, and (ii) providing at least one tool and/or instructions
25 to form a surgical flap for placing the implant in the tissue region.

40. A method for providing treatment for a
30 physiologic condition comprising (i) providing an implant sized and configured to be implanted in a targeted tissue region comprising at least one pharyngeal structure or at least one anatomic component within a pharyngeal conduit, and (ii) providing at least one tool and/or instructions to form a surgical pocket for placing the implant in the
tissue region.

35 41. A method according to claim 38 or 39 or 40,

further including providing at least one tool and/or instructions for stabilizing the implant within a mucosa, a submucosa, or against a fascia, or against or within a muscle.

5 42. A method according to claim 38 or 39 or 40, further including providing at least one tool and/or instructions for stabilizing the implant against a submucosa, or a fascia, or against or within a muscle, without stabilizing through a mucosa.

10 43. An implant comprising an implant body sized and configured to be implanted in a targeted tissue region comprising at least one pharyngeal structure or at least one anatomic component within a pharyngeal conduit, and stabilization elements carried by the implant body to
15 anchor the implant in the targeted tissue region.

 44. An implant according to claim 43, wherein the stabilization elements including at least one elastic member.